

ATTORNEY DOCKET NO.: 053933-5008
Application No.: 09/821,738
Page 2

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A dynamic control diffraction grating comprising a voltage-dependent phase varying material for transmitting a beam of light therethrough and varying the phase of the transmitted light beam in response to external voltages applied thereto, said voltages having different levels and being applied to said phase varying material at regular intervals in a comb form, wherein the comb form includes two opposing electrodes interdigitated with each other, and wherein said voltages levels are such that a light amount ratio of a zero-order diffracted beam to a high-order diffracted beam of light is higher in a write mode than in a read mode.

Claim 2 (Original): A dynamic control diffraction grating as set forth in Claim 1, wherein said voltage-dependent phase varying material is liquid crystal.

Claim 3 (Original): A dynamic control diffraction grating as set forth in Claim 1, wherein said voltage-dependent phase varying material is a refractive index varying material for varying said phase of said transmitted light beam with a variation in its refractive index responsive to said first and second voltages.

ATTORNEY DOCKET NO.: 053933-5008
Application No.: 09/821,738
Page 3

Claim 4 (Original): A dynamic diffraction grating as set forth in Claim 3, wherein said refractive index varying material is lithium niobate.

Claim 5 (Currently Amended): A dynamic control diffraction grating comprising:

a voltage-dependent phase varying material for transmitting a beam of light therethrough and varying the phase of the transmitted light beam in response to first and second voltages applied thereto;

a first transparent electrode attached to one inner surface of a flat glass panel for applying said first voltage to said phase varying material, said glass panel containing said phase varying material, said first transparent electrode including a plurality of combs arranged at regular intervals; and

a second transparent electrode attached to the other inner surface of said glass panel for applying said second voltage to said phase varying material, said second transparent electrode including a plurality of combs arranged at regular intervals;

wherein the plurality of combs are interdigitated between the first and second transparent electrode,

wherein said first and second voltages are such that a light amount ratio of a zero-order diffracted beam to a high-order diffracted beam of light is higher in a write mode than in a read mode.

ATTORNEY DOCKET NO.: 053933-5008

Application No.: 09/821,738

Page 4

Claim 6 (Original): A dynamic control diffraction grating as set forth in Claim 5, wherein said voltage-dependent phase varying material is liquid crystal.

Claim 7 (Original): A dynamic control diffraction grating as set forth in Claim 5, wherein said voltage-dependent phase varying material is a refractive index varying material for varying said phase of said transmitted light beam with a variation in its refractive index responsive to said first and second voltages.

Claim 8 (Original): A dynamic control diffraction grating as set forth in Claim 7, wherein said refractive index varying material is lithium niobate.

Claims 9-26 (Canceled).